

C. REMARKS/ARGUMENTS

1. STATUS OF PENDING CLAIMS

Claims 1-24 currently stand rejected under 35 USC 103, in a Final Office Action dated February 24, 2006.

During a first interview dated June 22, 2006, pending claims 1-24 had been discussed in light of the 35 USC § 103 rejections maintained by the Examiner, in view of an IEEE article "Application of DSP Techniques to Nuclear Magnetic Resonance Spectroscopy" by Worley et al (Worley), and of U.S. Pat. No. 5,041,789 to Keller et al. (Keller). During this interview, the Examiner agreed with Applicant's explanation that an SNR criterion was not equivalent to identifying a gap between a noise-free singular value and a noise singular value, and therefore that the combination of Worley and Keller did not render the pending claims obvious under 35 USC 103.

The Examiner, however, drew Applicant's attention for the first time to a new prior art reference, that had never been mentioned before. The Examiner maintained that recognizing that a sufficient SNR has been reached when a gap appears between noise-free singular values and noise singular values would have been obvious to one of ordinary skill in the art at the time of the invention, in view of the combination of Worley, Kelley, and a new prior art reference. The new prior art reference cited by the Examiner is: pages 208-225 of the textbook "Adaptive Filter Theory," by Simon Haykin ("Haykin"). This prior art reference had been neither cited nor mentioned in any of the previous Office Actions, including the Final Office Action mentioned above.

**2. SUMMARY OF TELEPHONE INTERVIEW HELD JULY 19, 2006
PURSUANT TO 37 C.F.R. 1.133**

This is a summary of the telephonic interview held on Wednesday July 19, 2006 between Applicant's attorney (Elizabeth Kim), Examiner Sellers, and Howard Taylor, the inventor of the above-referenced application.

During the interview of July 19, 2006), Prof. Taylor explained to the Examiner the differences between Haykin and the pending claims. In particular, Prof. Taylor explained that the subject matter of Haykin was entirely different, compared to the pending claims. Prof. Taylor explained that Haykin was directed to the steepest descent algorithm for finding a minimum in an iterative problem, using existent data. Prof. Taylor further explained that in contrast to the subject matter of the pending claims, Haykin did not teach, suggest, or relate in any way to criteria for determining when a sufficient number of data acquisitions had taken place so that no further data acquisition runs were needed. Prof. Taylor also explained that Haykin neither taught, suggested, or related to noiseless and noise free eigenvalues, nor did Haykin teach or suggest that the appearance and stability of a gap between noiseless and noise free eigenvalues was a criterion for determining when sufficient data acquisition had taken place.

The Examiner acknowledged the differences between the newly cited art (Haykin) and the pending claims, as explained by Prof. Taylor during the July 19 interview.

During the previous interview of June 22, 2006, the Examiner had further suggested that the following amendment to independent claim 1 would overcome the prior art references listed above, including the newly cited Haykin reference :

1. An apparatus for performing spectral analysis, the apparatus comprising ... a control system configured to identify a gap between a smallest noise-free singular value and an adjacent a first noise singular value, so as to request the data acquisition system to perform additional measurements if no such separation can be identified, and to prevent further measurements from being made by the data acquisition system if the appearance and stability of said gap can be established.

Applicant's attorney (Elizabeth Kim) confirmed (by a separate phone call) with the inventor Prof. Taylor that the above amendments proposed by the Examiner were acceptable to Prof. Taylor.

3. CLAIMS 1-24 ARE ALLOWABLE OVER ALL PRIOR ART REFERENCES CITED BY THE EXAMINER, INCLUDING THE NEWLY CITED REFERENCE HAYKIN

During this interview, the Examiner agreed with Applicant's explanation that an SNR criterion was not equivalent to identifying a gap between a noise-free singular value and a noise singular value, and therefore that the combination of Worley and Keller did not render the pending claims obvious under 35 USC 103.

In view of the above interview, and in view of Prof. Taylor's agreeing to the claim amendments proposed by the Examiner, Applicant respectfully submits that the pending claims 1-24 are allowable over the newly cited reference Haykin. Allowance of the pending claims is therefore respectfully requested.

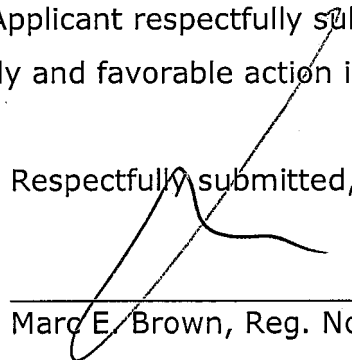
In the unlikely event that the Examiner still views claims 1-24 as not allowable over the newly cited reference Haykin, Applicant respectfully requests that the finality of the previous Office Action be withdrawn, since 1) Haykin had never been cited in any Office Action prior to the June 22 interview, hence Applicant never had a chance to review it before the Final Office Action was issued; and 2) Applicant's response that preceded the Final Office Action did not include any claim amendments.

D. CONCLUSION

For all of the reasons above, Applicant respectfully submits that claims 1-24 are in condition for allowance. An early and favorable action is earnestly solicited.

Respectfully submitted,

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